

## DialogIP

**Polyurethanes with carboxylate functionality - for films which are clear, hard, glossy, and have improved humidity resistance**

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## Patent Family

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EP 619111	A1	19941012	EP 94105264	A	19940405	199439	B
CA 2120644	A	19941007	CA 2120644	A	19940406	199501	
JP 6321741	A	19941122	JP 9468538	A	19940406	199506	
EP 619111	B1	19961227	EP 94105264	A	19940405	199705	
DE 69401230	E	19970206	DE 601230	A	19940405	199711	
			EP 94105264	A	19940405		
CA 2120644	C	19971118	CA 2120644	A	19940406	199807	

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**Cited Patents:** US 4743673 ; WO 9403510

## Patent Details

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## Abstract:

EP 619111 A

An aq. based hair fixative compsn. comprises (a) an effective wt.%, based on the total wt. of the hair fixative compsn., of a fully reacted carboxylated linear polyurethane which comprises the reaction prod. of (i) one or more 2,2-hydroxymethyl-substd. carboxylic acids of formula (1), present in a sufficient amt. by wt. to give 0.35-2.25 milliequivalents of carboxyl functionality per gram of polyurethane. (ii) 10-90 wt.%, based on the wt. of the polyurethane, of one or more organic cpds. each having no more than two active H atoms, and (iii) one or more organic diisocyanates present in a sufficient amt. to react with the active hydrogens of the 2,2-hydroxymethyl-substd. carboxylic acid and the organic cpds., except the hydrogen on the carboxylate of the 2,2-hydroxymethyl-substd. carboxylic acid; (b) an effective amt. of one or more cosmetically acceptable organic or inorganic

base to neutralise a sufficient proportion of the available carboxyl gps. on the polyurethane to make it soluble in water or in a mixt. of water and polar organic solvent; and (c) a solvent comprising (i) water and (ii) 0-85 wt.% of the solvent, of one or more polar organic solvents R-(CH<sub>2</sub>OH)C(CH<sub>2</sub>OH)-COOH (1), R=H, 1-20C alkyl.

USE - Used as a hair fixative.

ADVANTAGE - They exhibit all the characteristics required by compsns. contg. 0-85% volatile organic solvent. The films found are clear, hard, glossy and provide humidity resistance while being readily removable.

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EP 619111 B

An aqueous based hair fixative composition that comprises (A) an effective percent by weight, based on the total weight of the hair fixative composition, of a fully reacted carboxylated linear polyurethane comprising the reaction product of (i) one or more 2,2-hydroxymethyl-substituted carboxylic acids, represented by the formula R-C(CH<sub>2</sub>OH)<sub>2</sub>COOH in which R represents hydrogen, or C1-C20 alkyl, present in a sufficient amount by weight to give 0.35-2.25 milliequivalents of carboxyl functionality per gram of polyurethane, (ii) 10-90 % by weight, based on the weight of the polyurethane, of one or more organic compounds each having no more than two active hydrogen atoms, and (iii) one or more organic diisocyanates present in a sufficient amount to react with the active hydrogens of the 2,2-hydroxymethyl-substituted carboxylic acid and the organic compounds, excepting the hydrogen on the carboxylate of the 2,2-hydroxymethyl-substituted carboxylic acid; (B) an effective amount of one or more cosmetically acceptable organic or inorganic base to neutralize a sufficient proportion of the available carboxyl groups on the polyurethane to make the polyurethane soluble in water or in a mixture of water and polar organic solvent; and (C) a solvent comprising (i) water, and (ii) 0-85 %, by weight of the solvent, of one or more polar organic solvents.

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